امتحانات رقم (1)

الترم الاول

Model (1)

24 Marks

1 A) Choose the correct answer:

1. The nucleus of an oxygen atom ($_{8}O$) contains ..... protons.

   a) 2 b) 8 c) 16 d) 24

2. Which of the following is considered a field force?

   a) Friction. b) Collision. c) Magnetism. d) Elasticity.

B) First: What happens when ...?

1. The Moon is found completely inside the Earth's shadow.

   - .....

2. Keeping yogurt out of the refrigerator.

   - .....

Second: Compare between the following:

1. Mammals and fish (with respect to their respiratory organs)

Mammals	Fish
.....	.....

2. Iron and copper (with respect to their chemical symbols and their ability to be attracted to the magnet)

Points of comparison	Iron	Copper
Chemical symbols	Fe	Cu
The ability to be attracted to the magnet	Magnetic material	Non-magnetic material

2 A) Write the scientific term:

1. Electrostatic attraction between a positive ion and a negative ion. (.....)
2. The simplest pure form of matter that cannot be separated into components by physical or chemical methods. (.....)

B) Give a reason:

1. Fuel transport vehicles must be in contact with the ground using metal chains.

   - .....

2. The nodular bacteria have great importance for leguminous plants.

   - .....

3. The length of the shadow at noon is the shortest.

   - .....

4 The atom is electrically neutral.

- .....

3 A) Put (✓) or (X):

1 Elements in the same group have similar chemical properties. (✓)

2 The mass of a body on Earth = weight × gravitational field strength. (X)

B) Mention the importance of each of the following:

1 Hofmann Voltmeter:

- .....

2 Penicillium notatum fungus.

- .....

3 Helium gas:

- .....

4 Stem cells in humans:

- .....

4 A) Complete the following sentences:

1 The group of ..... planets are described as rocky planets such as Earth.

2 The valency of alkaline earth metals is ....., while the valency of halogens is .....

B) Answer the following questions:

1 An element (M) whose nucleus contains 12 neutral particles and has 23 nucleons:

(A) Calculate the number of protons and neutrons.

(B) Write the symbol of the element, including Z and A.

Solution:

.....

.....

.....

2 Classify the following living organisms according to what you have studied, then mention the similarities between them:

1- Bacteria 2- Euglena

	Bacteria	Euglena
Classification	Prokaryotes - Unicellular organisms	Eukaryote - Unicellular organism
Similarities	Both of them are unicellular organisms.	

Model (2)

24 Marks

1 A) Write the scientific term:

1. The electric charges accumulate on the surfaces of objects when they lose or gain electrons.

(.....)

2. The phase of the Moon when it appears as a completely dark disk at the end of the lunar month.

(.....)

B) Give a reason:

1. The weight of an object changes from one planet to another.

- .....

2. Nitrogen is used to fill car tires instead of air.

- .....

3. Classifying living organisms is important.

- .....

4. An atom becomes a positive ion when it loses one or more electrons.

- .....

2 A) Correct the underlined words:

1. The sand and salt solution mixture can be separated by <u>condensation</u> followed by evaporation.

(.....)

2. The mathematical relation $2n^2$ determines the number of <u>neutrons</u> in the main energy levels.

(.....)

B) First: Compare between each of the following:

1. Mercury and Earth (With respect to the atmosphere and volcanic activity).

Points of comparison	Mercury	Earth
Atmosphere	Very thin, composed of hydrogen and helium gases	Composed mainly of nitrogen and oxygen gases
Volcanic activity	No active volcanoes	Many active volcanoes

Second: Mention one use for each of the following:

1. Aluminum-titanium alloy:

- .....

2. Electroscope:

- .....

3 A) Cross out the odd word:

1. Arteries – Veins – Heart – Phloem Rissues (.....)
2. Number of Protons – Number of Electrons – Atomic Number – Mass Number (.....)

B) What happens when ...?

1. The angle at which sunlight falls on the different areas of Earth's surface changes.
   - .....
2. A sodium atom ($_{11}$Na) loses an electron from its outermost energy level.
   - .....
3. An ebonite rod is rubbed with wool (With respect to types of charges).
   - .....
4. The human body lacks vitamin D.
   - .....

4 A) Choose the correct answer:

1. Gravity is a type of ..... .
   a) energy b) matter c) force d) speed
2. The difference between the mass number (A) and atomic number (Z) equals the number of ..... .
   a) electrons b) protons c) nucleons d) neutrons

B) Answer the following questions:

First: Answer the following problem:

- A body has a mass of 100 kg on Earth. Calculate the following:

(1) Its mass on the Moon:

- .....

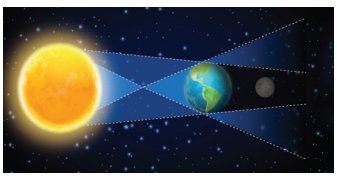
(2) Its weight on Earth, given that the gravitational field strength is 10 N/kg:

- .....

Second: 1- Write the electronic configuration for ($_{19}$K), then determine:
The type of atom, the valency and the type of ion.

	Electronic configuration	Type of atom	Valency	Type of ion
$_{19}$K	2,8,8,1	Metal	Monovalent	Positive ion

2- Look at the opposite figure, then answer:



- What is the name of the region where the Moon is located?
  - .....
- What phenomenon is shown in the diagram?
  - .....

Model (3)

24 Marks

1 A) Complete the following sentences:

1. The oxygen molecule O_2 is an example of ..... molecule, while methane CH_4 is an example of ..... molecule.
2. Yogurt bacteria convert lactose sugar in the milk into ....., which gives yogurt its distinctive taste and texture.

B) Give a reason:

1. The mass number is often greater than the atomic number.

   - .....

2. The difference in the angle at which sunlight falls on different areas of Earth's surface.

   - .....

3. A glass rod and an ebonite rod attract each other when rubbed with silk.

   - .....

4. Bacteria differ from amoebas although both are unicellular organisms.

   - .....

2 A) Put (✓) or (X):

1. The Moon appears as a partial disk during a total lunar eclipse. (×)
2. Elements were arranged in Mendeleev's table in ascending order according to their atomic number. (×)

B) Answer the following questions:

First: Mention the importance of:

1. Guard cells in plants:

   - .....

2. The coulometer:

   - .....

Second: Write the electronic configuration for the following elements, then determine their location in the modern periodic table:

1. $_{10}Ne$
2. $_{20}Ca$

Element	Electronic configuration	No. of period	No. of group
$_{10}Ne$	2,8	Period 2	Group (0)
$_{20}Ca$	2,8,8,2	Period 2	Group 2A

3 A) Cross out the odd word:

1. Iron – Copper – Cobalt – Nickel (.....)
2. Prokaryote – Relatively Small – Multicellular – Unicellular (.....)

B) Answer the following questions:

First: Mention one difference between:

1. Yeast fungus and penicillium notatum fungi (with respect to the use):

Using of yeast fungus	Using of lactic acid bacteria
It is used in making bread and ethyl alcohol production.	They convert lactose, "Milk sugar" into lactic acid, which gives yogurt its sour taste and thickness.

2. Mars and Jupiter (with respect to atmospheric composition):

Mars	Jupiter
Its atmosphere is composed mainly of carbon dioxide gas.	It is a gaseous planet, its atmosphere composed of hydrogen and helium gases.

Second: An element with a mass number of 40 and 20 neutrons in its nucleus. Determine:

1. The number of occupied energy levels in the atom. (.....)
2. The number of electrons in the outermost energy level. (.....)

4 A) Write the scientific term:

1. Compounds with high melting points that dissolve in water. (.....)
2. The arrangement of materials according to their ease of losing electrons when rubbed together. (.....)

B) What happens when ...?

1. A glass rod is brought close to an ebonite rod after rubbing both with cotton cloth.
   - .....
2. A freely moving magnet is suspended from its center.
   - .....
3. A part of the moon enters Earth's shadow.
   - .....
4. The atomic number increases within the same group (regarding atomic radius).
   - .....

Model (4)

24 Marks

1 A) Choose the correct answer:

1. Paramecieum and bacteria are similar in that both are ..... .

   a) multicellular b) unicellular c) prokaryotes d) eukaryotes

2. An element located in the third period and group 5A has an atomic number of ..... .

   a) 5 b) 8 c) 13 d) 15

B) Compare between each of the following:

1. S-block and P-block elements (with respect to their location in the periodic table and the number of groups):

Points of comparison	S block elements	P block elements
Location	Left side of the table	Right side of the table
Number of groups	2 groups	6 groups

2. Photosynthesis process and cellular respiration (with respect to their products and the organelle responsible for each):

Points of comparison	Photosynthesis process	Cellular respiration
Products	Oxygen gas Glucose sugar	Carbon dioxide gas Water Energy
Responsible organelles	Green plastids	Mitochondria

2 A) Write the scientific term:

1. An imaginary line passing through Earth from the North Pole to the South Pole through Earth's center. (.....)
2. The unit that is used to measure electric charge. (.....)

B) What happens when ...?

1. Contaminated food is ingested with the Entamoeba histolytica microbe.

   - .....

2. The apparent height of the Sun increases in the sky during the day.

   - .....

3. The nucleus of an atom doesn't contain neutrons.

   - .....

4. A non-metal atom gains one or more electrons during a chemical reaction.

   - .....

3 A) Correct the underlined words:

1. All inner planets have a thick crust except Mars. (.....)
2. The molecule of Egyptian blue dye is composed of three elements. (.....)

B) Mention one importance for each of the following:

1. Tide: .....
2. Penicillium roqueforti fungus:

   - .....
3. Aerogel and its exceptional insulation ability:

   - .....
4. Stainless steel: .....

4 A) Mention the number for each of the following:

1. The number of gaseous planets in the solar system. (.....)
2. The number of electrons in an ion of an element with an atomic number of 13. (.....)

B) Answer the following questions:

1. Write two properties of electric field lines.

   1- .....

   2- .....
2. Classify the following materials into two groups: (Copper – Cobalt – Silver – Iron)

Magnetic materials	Non-magnetic materials
Iron - Cobalt	Copper - Silver

3. Compare between plant and animal cells (with respect to the presence of centrioles and chloroplasts):

Points of comparison	Plant cell	Animal cell
Centrioles	Absent	Present
Chloroplasts	Present	Absent

4. In light of your understanding of electric field lines, indicate the type of positive charge or negative charge that is placed in the red and blue circles.

   - .....

Model (5)

24 Marks

1 A) Choose the correct answer:

1. ..... is an example of a heterogeneous mixture.
   a) Milk b) Oil in water c) Mineral water d) Atmospheric air
2. All the following are from the components of an animal cell except ..... .
   a) centriole b) plasma membrane c) cell wall d) nucleus

B) What happens when ...?

1. Two objects with different electric charges are brought close to each other.
   - .....
2. Methane gas is found in the atmosphere of Uranus planet.
   - .....
3. The atomic number equals the mass number in a hydrogen atom.
   - .....
4. The roots of leguminous plants are left in the soil after harvest.
   - .....

2 A) Put (✓) or (X):

1. Helium is a flammable gas used to fill balloons. (×)
2. A person's weight on the Moon is greater than their weight on Earth. (×)

B) Give a reason:

1. The compass needle takes a fixed direction in the same place.
   - .....
2. The phenomenon of the Moon's phases occurs.
   - .....
3. Green plants and algae perform photosynthesis.
   - .....
4. Ionic bonds only produce compound molecules.
   - .....

3 A) Complete the following sentences:

1. ..... and ..... are considered a prokaryotic beneficial microbe.
2. The symbol for the element carbon is ....., and the symbol for sodium is .....

B) Define the following:

1. Ion:

- .....

2. Apparent motion of the Sun:

- .....

3. Law of attraction and repulsion:

- .....

4. Valence electrons:

- .....

4 A) State the number for each of the following:

1. The total number of elements in the modern periodic table: (.....)
2. The number of particles in the nucleus of a hydrogen atom: (.....)

B) Answer the following questions:

1. Draw the electric field lines of a positive charge.

- .....

2. How can microbes enter the human body?

- .....

3. What is meant by the atomic number?

- .....

4. Calculate the weight of an object with a mass of 6 kg, given that the Earth's gravitational field strength is 10 N/kg.

- .....

Model (1) Answer

24 Marks

1 A) Choose the correct answer:

1. The nucleus of an oxygen atom ($_8O$) contains ..... protons.

   a) 2 b) **8** c) 16 d) 24

2. Which of the following is considered a field force?

   a) Friction. b) Collision. c) **Magnetism.** d) Elasticity.

B) First: What happens when ...?

1. The Moon is found completely inside the Earth's shadow.

   - **A total lunar eclipse occurs.**

2. Keeping yogurt out of the refrigerator.

   - **The lactic acid bacteria will continue its action and increase the yogurt acidity which spoils its taste.**

Second: Compare between the following:

1. Mammals and fish (with respect to their respiratory organs)

Mammals	Fish
They respire oxygen gas using two lungs.	They respire oxygen gas using gills.

2. Iron and copper (with respect to their chemical symbols and their ability to be attracted to the magnet)

Points of comparison	Iron	Copper
Chemical symbols	**Fe**	**Cu**
The ability to be attracted to the magnet	**Magnetic material**	**Non-magnetic material**

2 A) Write the scientific term:

1. Electrostatic attraction between a positive ion and a negative ion. (**Ionic bond**)
2. The simplest pure form of matter that cannot be separated into components by physical or chemical methods. (**Element**)

B) Give a reason:

1. Fuel transport vehicles must be in contact with the ground using metal chains.

   - **To discharge the electric charges produced by the friction of the fuel with the surface of the fuel tank to prevent fuel consumption.**

2. The nodular bacteria have great importance for leguminous plants.

   - **Because they provide them with nitrogen in a usable form to produce proteins.**

3 The length of the shadow at noon is the shortest.

- **Because the Sun's apparent height is the highest at noon**.

4 The atom is electrically neutral.

- **Because the number of protons (positive charges) inside the nucleus of an atom equals the number of electrons (negative charges) that revolve around the nucleus**.

3 A) Put (✓) or (X):

1 Elements in the same group have similar chemical properties. (✓)

2 The mass of a body on Earth = weight × gravitational field strength. (X)

B) Mention the importance of each of the following:

1 Hofmann Voltmeter:

- **It is used in water electrolysis into its elements.**

2 Penicillium notatum fungus.

- **It secretes a substance that stops the growth and reproduction of a certain type of bacteria.**

3 Helium gas:

- **It is used to fill balloons**.

4 Stem cells in humans:

- **They have the ability to be transformed and differentiated into all differentiated cells of the body**.

4 A) Complete the following sentences:

1 The group of **inner** planets are described as rocky planets such as Earth.

2 The valency of alkaline earth metals is **divalent**, while the valency of halogens is **monovalent**.

B) Answer the following questions:

1 An element (M) whose nucleus contains 12 neutral particles and has 23 nucleons:

(A) Calculate the number of protons and neutrons.

(B) Write the symbol of the element, including Z and A.

Solution:

A) No. of protons = No. of nucleons - No. of neutrons

= 23 – 12 = 11

No. of neutrons = 12

B) $_{11}M^{23}$

2 Classify the following living organisms according to what you have studied, then mention the similarities between them:

1- Bacteria 2- Euglena

	Bacteria	Euglena
Classification	**Prokaryotes - Unicellular organisms**	**Eukaryote - Unicellular organism**
Similarities	**Both of them are unicellular organisms.**	

Model (2) Answer

24 Marks

1 A) Write the scientific term:

1. The electric charges accumulate on the surfaces of objects when they lose or gain electrons.

(**Static electricity**)

2. The phase of the Moon when it appears as a completely dark disk at the end of the lunar month.

(**New Moon**)

B) Give a reason:

1. The weight of an object changes from one planet to another.

- Because the gravitational field intensity varies from one planet to another.

2. Nitrogen is used to fill car tires instead of air.

- Because nitrogen is not affected by temperature changes and does not react with rubber.

3. Classifying living organisms is important.

- To facilitate their studying and identification.

4. An atom becomes a positive ion when it loses one or more electrons.

- Because the number of positively charged protons becomes greater than the number of negatively charged electrons.

2 A) Correct the underlined words:

1. The sand and salt solution mixture can be separated by condensation followed by evaporation.

(**filtration**)

2. The mathematical relation $2n^2$ determines the number of neutrons in the main energy levels.

(**electrons**)

B) First: Compare between each of the following:

- Mercury and Earth (With respect to the atmosphere and volcanic activity).

Points of comparison	Mercury	Earth
Atmosphere	Very thin, composed of hydrogen and helium gases	Composed mainly of nitrogen and oxygen gases
Volcanic activity	No active volcanoes	Many active volcanoes

Second: Mention one use for each of the following:

1. Aluminum-titanium alloy:

- It is used in the construction of military aircraft frames.

2. Electroscope:

- It is used to detect if an object is electrically charged and the type of charge on a charged object.

3 A) Cross out the odd word:

1. Arteries – Veins – Heart – Phloem Rissues (**phloem tissues**)
2. Number of Protons – Number of Electrons – Atomic Number – Mass Number (**Mass Number**)

B) What happens when ...?

1. The angle at which sunlight falls on the different areas of Earth's surface changes.
   - **The intensity of sunlight that falls on Earth differs from one place to another.**
2. A sodium atom ($_{11}$Na) loses an electron from its outermost energy level.
   - **It becomes a positively charged ion with a single positive charge.**
3. An ebonite rod is rubbed with wool (With respect to types of charges).
   - **The ebonite rod gains electrons and has a negative charge, while the wool loses electrons and has a positive charge.**
4. The human body lacks vitamin D.
   - **The person will suffer from osteoporosis.**

4 A) Choose the correct answer:

1. Gravity is a type of ..... .

   a) energy b) matter c) **force** d) speed

2. The difference between the mass number (A) and atomic number (Z) equals the number of ..... .

   a) electrons b) protons c) nucleons d) **neutrons**

B) Answer the following questions:

First: Answer the following problem:

- A body has a mass of 100 kg on Earth. Calculate the following:

(1) Its mass on the Moon:

- **The mass remains 100 kg because mass doesn't change by changing the place.**

(2) Its weight on Earth, given that the gravitational field strength is 10 N/kg:

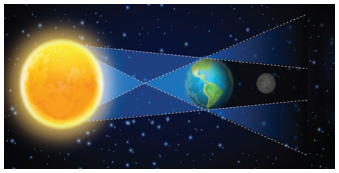
- **Weight on Earth = mass × gravitational field strength = 100 × 10 = 1000 N.**

Second: (1) Write the electronic configuration for ($_{19}$K), then determine:

The type of atom, the valency and the type of ion.

	Electronic configuration	Type of atom	Valency	Type of ion
$_{19}$K	2,8,8,1	Metal	Monovalent	Positive ion

(2) Look at the opposite figure, then answer:



- What is the name of the region where the Moon is located?
  - **Umbra shadow.**
- What phenomenon is shown in the diagram? - **Total lunar eclipse.**

Model (3) Answer

24 Marks

1 A) Complete the following sentences:

1. The oxygen molecule O_2 is an example of **element** molecule, while methane CH_4 is an example of **compound** molecule.
2. Yogurt bacteria convert lactose sugar in the milk into **lactic acid**, which gives yogurt its distinctive taste and texture.

B) Give a reason:

1. The mass number is often greater than the atomic number.
   - **Because the mass number equals the sum of protons and neutrons, whereas the atomic number equals only the number of protons.**
2. The difference in the angle at which sunlight falls on different areas of Earth's surface.
   - **Due to the tilt of Earth's axis.**
3. A glass rod and an ebonite rod attract each other when rubbed with silk.
   - **As by rubbing both rods with silk, the glass rod loses electrons and has positive charges, which attract the negative charges on the ebonite rod that gains electrons through rubbing.**
4. Bacteria differ from amoebas although both are unicellular organisms.
   - **Because bacteria are prokaryotic organisms, while amoebas are eukaryotic organisms.**

2 A) Put (✓) or (X):

1. The Moon appears as a partial disk during a total lunar eclipse. (×)
2. Elements were arranged in Mendeleev's table in ascending order according to their atomic number. (×)

B) Answer the following questions:

First: Mention the importance of:

1. Guard cells in plants:
   - **They control the opening and closing of stomata on plant leaves.**
2. The coulometer:
   - **It measures weak electric charges.**

Second: Write the electronic configuration for the following elements, then determine their location in the modern periodic table:

1. $_{10}Ne$
2. $_{20}Ca$

Element	Electronic configuration	No. of period	No. of group
$_{10}Ne$	2,8	Period 2	Group (0)
$_{20}Ca$	2,8,8,2	Period 2	Group 2A

3 A) Cross out the odd word:

1. Iron – Copper – Cobalt – Nickel (**Copper**)
2. Prokaryote – Relatively Small – Multicellular – Unicellular (**Multicellular**)

B) Answer the following questions:

First: Mention one difference between:

1. Yeast fungus and penicillium notatum fungi (with respect to the use):

Using of yeast fungus	Using of lactic acid bacteria
It is used in making bread and ethyl alcohol production.	They convert lactose, "Milk sugar" into lactic acid, which gives yogurt its sour taste and thickness.

2. Mars and Jupiter (with respect to atmospheric composition):

Mars	Jupiter
Its atmosphere is composed mainly of carbon dioxide gas.	It is a gaseous planet, its atmosphere composed of hydrogen and helium gases.

Second: An element with a mass number of 40 and 20 neutrons in its nucleus. Determine:

1. The number of occupied energy levels in the atom. (**4 energy levels**)
2. The number of electrons in the outermost energy level. (**2 electrons**)

4 A) Write the scientific term:

1. Compounds with high melting points that dissolve in water. (**Ionic compounds**)
2. The arrangement of materials according to their ease of losing electrons when rubbed together. (**Electrostatic series**)

B) What happens when ...?

1. A glass rod is brought close to an ebonite rod after rubbing both with cotton cloth.
   - **They attract each other.**
2. A freely moving magnet is suspended from its center.
   - **It takes north and south direction of the Earth.**
3. A part of the moon enters Earth's shadow.
   - **A partial lunar eclipse occurs.**
4. The atomic number increases within the same group (regarding atomic radius).
   - **The atomic radius increases.**

Model (4) Answer

24 Marks

1 A) Choose the correct answer:

1. Paramecieum and bacteria are similar in that both are ..... .

   a) multicellular b) **unicellular** c) prokaryotes d) eukaryotes

2. An element located in the third period and group 5A has an atomic number of ..... .

   a) 5 b) 8 c) 13 d) **15**

B) Compare between each of the following:

1. S-block and P-block elements (with respect to their location in the periodic table and the number of groups):

Points of comparison	S block elements	P block elements
Location	**Left side of the table**	**Right side of the table**
Number of groups	**2 groups**	**6 groups**

2. Photosynthesis process and cellular respiration (with respect to their products and the organelle responsible for each):

Points of comparison	Photosynthesis process	Cellular respiration
Products	**Oxygen gas** **Glucose sugar**	**Carbon dioxide gas** **Water** **Energy**
Responsible organelles	**Green plastids**	**Mitochondria**

2 A) Write the scientific term:

1. An imaginary line passing through Earth from the North Pole to the South Pole through Earth's center. (**Earth's axis**)
2. The unit that is used to measure electric charge. (**Coulomb**)

B) What happens when ...?

1. Contaminated food is ingested with the Entamoeba histolytica microbe.
   - **The person will be infected with dysentery disease.**
2. The apparent height of the Sun increases in the sky during the day.
   - **The length of the shadow cast by an object decreases.**
3. The nucleus of an atom doesn't contain neutrons.
   - **The atomic number equals the mass number.**
4. A non-metal atom gains one or more electrons during a chemical reaction.
   - **It becomes a negatively charged ion.**

3 A) Correct the underlined words:

1. All inner planets have a thick crust except Mars. (**Mercury**)
2. The molecule of Egyptian blue dye is composed of three elements. (**Four**)

B) Mention one importance for each of the following:

1. Tide: **It is used to generate electricity**.
2. Penicillium roqueforti fungus:

   It is used in making Roquefort cheese.
3. Aerogel and its exceptional insulation ability:

   It's used in making jackets for researchers in Antarctica.
4. Stainless steel: **It's used to make cooking utensils**.

4 A) Mention the number for each of the following:

1. The number of gaseous planets in the solar system. (**4 planets**)
2. The number of electrons in an ion of an element with an atomic number of 13. (**10 electrons**)

B) Answer the following questions:

1. Write two properties of electric field lines.

   1- Imaginary lines that do not intersect.

   2- Start with positive charges and end with negative charges.
2. Classify the following materials into two groups: (Copper – Cobalt – Silver – Iron)

Magnetic materials	Non-magnetic materials
Iron - Cobalt	Copper - Silver

3. Compare between plant and animal cells (with respect to the presence of centrioles and chloroplasts):

Points of comparison	Plant cell	Animal cell
Centrioles	Absent	Present
Chloroplasts	Present	Absent

4. In light of your understanding of electric field lines, indicate the type of positive charge or negative charge that is placed in the red and blue circles.

- The red circle contains a positive charge, while the blue circle contains negative charges.

Model (5) Answer

24 Marks

1 A) Choose the correct answer:

1. ..... is an example of a heterogeneous mixture.
   a) Milk b) **Oil in water** c) Mineral water d) Atmospheric air
2. All the following are from the components of an animal cell except ..... .
   a) centriole b) plasma membrane c) **cell wall** d) nucleus

B) What happens when ...?

1. Two objects with different electric charges are brought close to each other.
   - They attract each other.
2. Methane gas is found in the atmosphere of Uranus planet.
   - The planet appears bluish-green in color.
3. The atomic number equals the mass number in a hydrogen atom.
   - The nucleus of the hydrogen atom has no neutrons.
4. The roots of leguminous plants are left in the soil after harvest.
   - Soil fertility increases.

2 A) Put (✓) or (X):

1. Helium is a flammable gas used to fill balloons. (×)
2. A person's weight on the Moon is greater than their weight on Earth. (×)

B) Give a reason:

1. The compass needle takes a fixed direction in the same place.
   - Because it is a magnet that takes the north and south direction of the Earth.
2. The phenomenon of the Moon's phases occurs.
   - Due to the Moon's elliptical orbit around Earth.
3. Green plants and algae perform photosynthesis.
   - Because they have chloroplasts that help them make their own food.
4. Ionic bonds only produce compound molecules.
   - Because they are formed by the combination of two different elements: a metal and a non-metal.

3 A) Complete the following sentences:

1. **Root nodule bacteria** and **lactic acid bacteria** are considered a prokaryotic beneficial microbe.
2. The symbol for the element carbon is **C**, and the symbol for sodium is **Na**.

B) Define the following:

1. Ion:

   - An atom of an element that has lost or gained one or more electrons during a chemical reaction.

2. Apparent motion of the Sun:

   - The apparent change in the Sun's position in the sky from east to west due to Earth's rotation on its axis.

3. Law of attraction and repulsion:

   - Magnetic poles of the same type repel each other, while opposite poles attract each other.

4. Valence electrons:

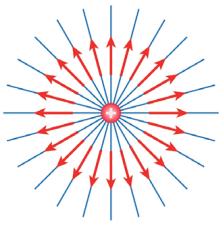
   - They are the electrons in the last energy level.

4 A) State the number for each of the following:

1. The total number of elements in the modern periodic table: (**118**)
2. The number of particles in the nucleus of a hydrogen atom: (**1**)

B) Answer the following questions:

1. Draw the electric field lines of a positive charge.



2. How can microbes enter the human body?

   - Through breathing, eating contaminated food, or skin penetration to reach the bloodstream.

3. What is meant by the atomic number?

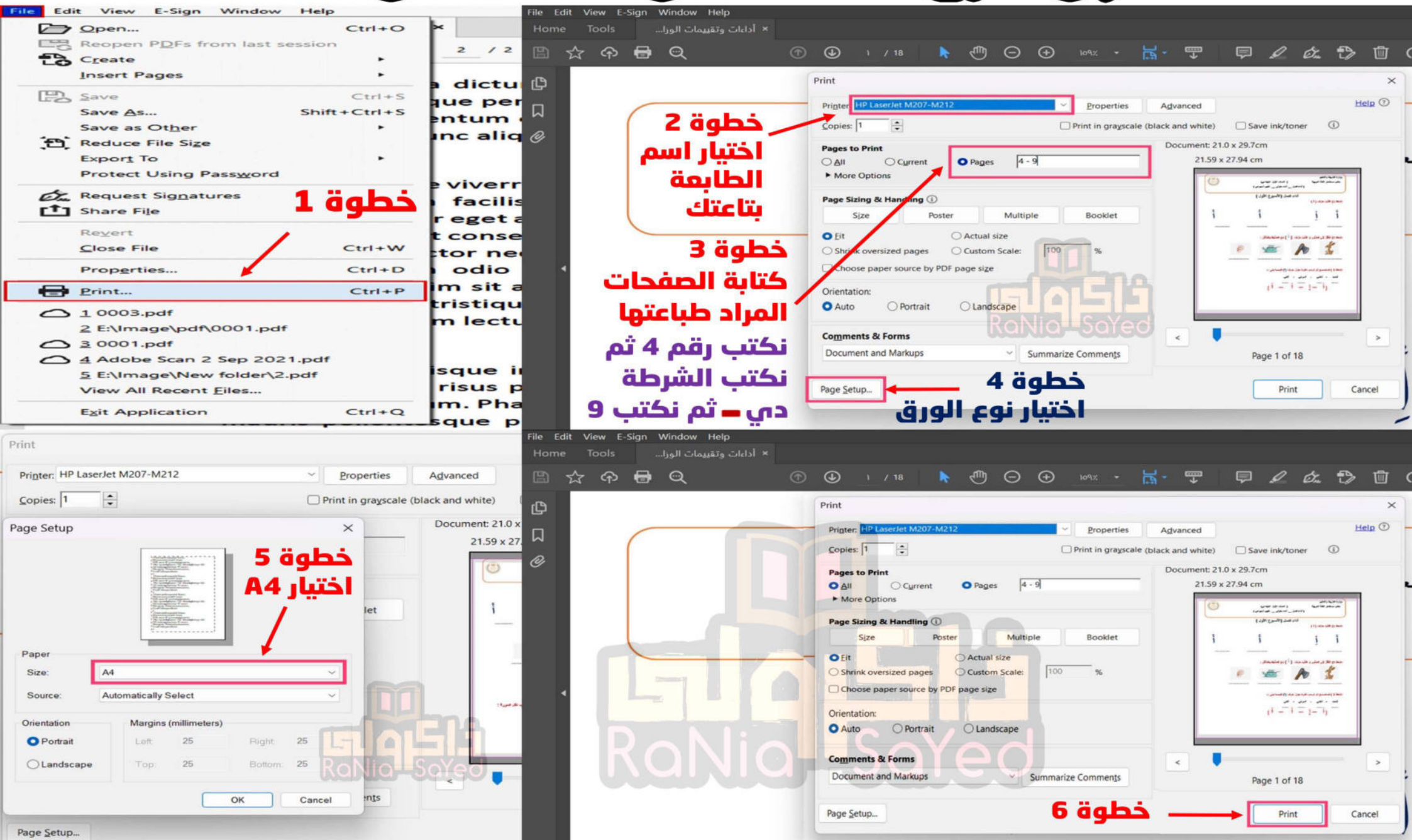
   - The number of positively charged protons in the nucleus of an atom or negatively charged electrons revolving around the nucleus.

4. Calculate the weight of an object with a mass of 6 kg, given that the Earth's gravitational field strength is 10 N/kg.

   - Weight = mass X 10 = 6 X 10 = 60 N.

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9



امتحانات رقم (2)

الترم الاول

Model 1

Question 1

A Choose the correct answer :

(1) Which of the following exists in the cells of both prokaryotes and eukaryotes?

ⓐ Plasma membrane. ⓑ Nucleus.

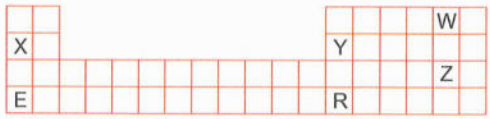
ⓒ Chloroplasts. ⓓ Centrosome.

(2) All the following chemical formulas are correct, except .....

ⓐ methane: CH_4 ⓑ Egyptian blue dye: CaCuSO

ⓒ nitric acid: HNO_3 ⓓ ozone: O_3

(3) From the opposite diagram, which represents a section of the periodic table, which two elements are in the same period?



The symbols shown on the table do not represent real element symbols.

ⓐ (X) and (E). ⓑ (X) and (Y).

ⓒ (Y) and (R). ⓓ (W) and (Z).

(4) Tides are at their peak when the Moon is in the phase of .....

ⓐ first quarter. ⓑ waxing crescent. ⓒ wanning gibbous. ⓓ full moon.

B Mark (✓) or (✗) for each statement, with correction :

(1) An oxygen atom binds with two hydrogen atoms in an ammonia molecule. ( )

(2) Objects are weightless in outer space. ( )

(3) Vitamin A regulates calcium and phosphorus levels in the blood. ( )

C Complete the following equation :

Glucose + ... ⟶ ..... + Water + Energy

Question 2

A Choose the odd word (or phrase) out, and mention the relation between the rest :

(1) Hydrogen / Helium / Neon / Argon.

(2) Na ion / O ion / Li ion / Mg ion.

(3) Silver / Copper / Aluminum / Nickel.

(4) Bread mold fungus / *Euglena* / Bacteria / Pea plant.

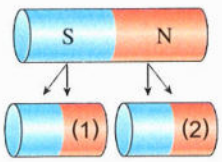
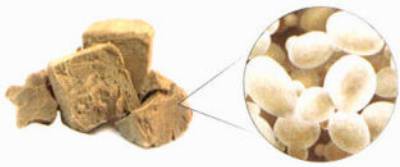
B Complete the following sentences :

(1) Both the ..... cell and the ..... cell are surrounded by a cell wall.

(2) The atmosphere of the planet ..... contains methane, while the atmosphere of the planet ..... contains oxygen.

(3) In plants, water and mineral salts are transported from the roots to the leaves through the ..... tissue, while food is transported from the leaves to the roots through the ..... tissue.

C Study the two following figures, then answer the questions below each :

(1)	(2)
	
Write the symbols of poles (1) and (2)	What is the industrial importance of this fungus?

Question 3

A Correct the underlined words :

(1) Balloons are filled with **oxygen** gas.

(2) All organic compounds contain **sulphur** and hydrogen elements.

(3) ***Euglena*** moves using pseudopodia.

(4) **Antimony** is a metalloid located in group 3A

B To whom are the following achievements attributed :

(1) Arranging elements in a periodic table based on atomic masses.

(2) Discovering the gravitational force.

(3) Discovering penicillin.

C Calculate the weight of a robot with a mass of 20 kg on the Earth's surface, knowing that the gravitational field intensity is 10 N/kg

Question 4

A Write the scientific term of each of the following statements :

(1) Undifferentiated cells capable of becoming specialized cells.

(2) Chemical compounds used to enhance agricultural production.

(3) Mixtures whose components cannot be distinguished by the naked eye.

(4) The magnetic force between a magnet and magnetic substances within its field.

B State the number that corresponds to each of the following :

(1) The number of hydrogen isotopes.

(2) The number of elements in sulphuric acid (H_2SO_4).

(3) The number of daylight hours in spring.

C Identify one similarity between electric forces **and** magnetic forces.

Model 2

Question 1

A Complete the following sentences :

(1) The element $_{19}K$ is located in period ..... and group .....

(2) The full moon phase occurs between the ..... phase and the ..... phase.

(3) ..... is an old tool used to determine the main geographical directions of Earth, while ..... is an ancient tool used to determine the time by the length and direction of shadows.

(4) The only liquid nonmetal is ....., while the only liquid metal is .....

B Choose the odd word (or phrase) out, and mention the relation between the rest :

(1) Melting point / Solubility in water / Rust / Density.

(2) Nickel / Copper / Iron / Cobalt.

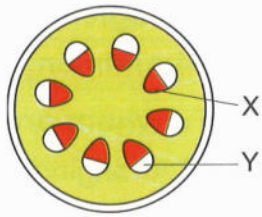
(3) Protons / Orbits / Electrons / Neutrons.

(4) Yeast fungus / Bread mold fungus / Mushroom fungus / *Penicillium* fungus.

C A plant with white flowers had its roots placed in red-colored water for two days :

(1) What changes occurred after two days?

(2) When the stem of the plant was cut transversely, it was observed that part (X) was colored red, while part (Y) was not. What are the names of (X) and (Y)?



Question 2

A Correct the underlined words :

(1) **Nerve** cells are undifferentiated cells.

(2) The bond in a nitrogen molecule is a **single** covalent bond.

(3) Arranging elements in the modern periodic table is a **measurement** process.

(4) The apparent height of the sun at noon is the highest in the **spring** season.

B State the name of each of the following :

(1) The molecule formed by the combination of three oxygen atoms.

(2) The closest noble gas to sodium. (3) A prokaryotic organism.

C Compare between photosynthesis process **and** cellular respiration (in two points only).

Question 3

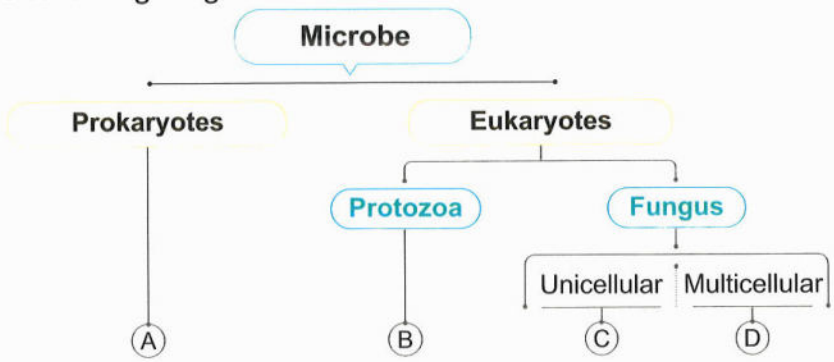
A Choose the correct answer :

(1) From the general characteristics common to all living organisms are .....

ⓐ digestion and excretion. ⓑ digestion and nutrition.

ⓒ excretion and nutrition. ⓓ nutrition and photosynthesis.

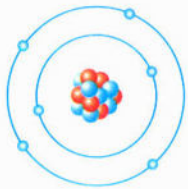
(2) From the following diagram :



Which microorganism is responsible for producing Roquefort cheese?

ⓐ (A). ⓑ (B). ⓒ (C). ⓓ (D).

(3) The opposite figure shows the structure of atom (X).



Which symbol represents this atom ?

ⓐ $^{13}_{7}X$ ⓑ $^{13}_{6}X$

ⓒ $^{6}_{7}X$ ⓓ $^{7}_{6}X$

(4) Which of the following statements represents the Earth's planet ?

ⓐ Its atmosphere is similar to Mars.

ⓑ It revolves around the moon from west to east.

ⓒ It is responsible for lunar eclipse.

ⓓ It revolves around the sun from east to west.

B Mark (✓) or (✗) for each statement, with correction :

(1) Eukaryotic cells contain mitochondria. ( )

(2) The nucleus of deuterium does not contain neutrons. ( )

(3) The atomic radii of alkali metals decrease with an increase in atomic number. ( )

(4) The intensity of Earth's gravitational field decreases as the distance from the center of the Earth increases. ( )

C Illustrate the covalent bonding between a hydrogen atom ($_1H$) and a fluorine atom ($_9F$) using Lewis dot structure.

Question 4

A Write the scientific term for each of the following statements :

(1) A symbolic formula that expresses the type and number of atoms in a molecule.

(2) The phenomenon of rising and falling tides in seas and bays daily.

(3) Regions in space formed by the collapse of a massive star at the end of its life.

(4) The similar magnetic poles are repelled, while the opposite magnetic poles are attracted.

B Give reasons for the following :

(1) Using aluminum-titanium alloys instead of pure aluminum in the construction of fighter jet frames.

(2) Metal chains hanging from fuel transport vehicles that touch the ground.

(3) Adding a portion of yogurt to milk when making new yogurt.

C Arrange the following materials in order from top to bottom in the electrostatic series :

(Cotton - Glass - Ebonite - Silk)

Model 3

Question 1

A Choose the correct answer :

(1) Atoms of the same element have the same .....

ⓐ atomic mass.
ⓑ number of electrons.
ⓒ number of neutrons.
ⓓ number of nucleons.

(2) The following figures illustrate the phases of the moon during a certain month in the Arabic calendar.

Day 1 Day 7 Day 14 Day 27

Which one represents the appearance of the moon on day 14 ?

ⓐ ⓑ ⓒ ⓓ

(3) The production of yogurt results in .....

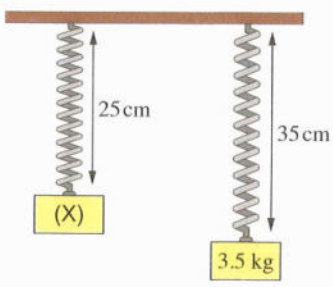
ⓐ ethyl alcohol only.
ⓑ lactic acid only.
ⓒ ethyl alcohol and lactic acid.
ⓓ lactose sugar and lactic acid.

(4) From the opposite figure :

What is the weight of object (X)?

[Given that the gravitational field intensity is 10 N/kg]:

ⓐ 30 N
ⓑ 35 N
ⓒ 40 N
ⓓ 45 N



B Correct the underlined words :

(1) Electrostatic forces are **contact** forces.

(2) **Dalton's** model was the first experimental model of the atom.

(3) The number of elements in period 2 is **greater than** the number of elements in period 3 in the periodic table.

C Element (X) a number of electrons in its last energy level M in its atom is douple that in its K energy level :

(1) Determine the position of the element in the periodic table.

(2) Which block does the element belong to?

Question 2

A Write the scientific term for each of the following statements:

(1) Pure substances that can be separated into their components by chemical methods.

(2) The region surrounding a magnet where its magnetic force effect appears.

(3) Unicellular organisms whose genetic material is found in the cytoplasm.

(4) Compounds whose aqueous solutions conduct electricity.

B Write the number of each of the following:

(1) Elements in the modern periodic table.

(2) The valency of the element $:\dot{\underset{\cdot}{X}}:$.

(3) The number of tides times occur in a day.

C If a body has a mass of 2 kg on Earth, **what is its mass on the surface of the moon?**

Question 3

A Complete the following statements :

(1) The bond in a hydrogen molecule (H_2) is formed by ..... electrons, while the bond in an oxygen molecule (O_2) is formed by ..... electrons.

(2) *Euglena* is a/an ..... organism that moves using .....

(3) The Earth's axis is tilted by ..... degree, while the moon's orbit is tilted by ..... degree relative to Earth's orbit around the sun.

B Mark (✓) or (✗) for each statement, with correction :

(1) Uranus has a solid crust. ( )

(2) Mushroom fungus are multicellular organisms. ( )

(3) Adult frogs respire through both their skin and lungs. ( )

C Draw a schematic diagram showing the magnetic field around a bar magnet.

Question 4

A What happens in the following cases:

(1) Approaching the north pole of one magnet close to the north pole of another magnet.

(2) A metal atom loses its valence electrons.

(3) Adding an antibiotic to the milk prepared for making yogurt.

B Name the device used in the following:

(1) Electrolyzing water into its elements.

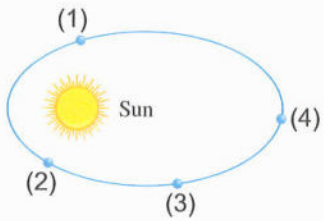
(2) Determining the type of electric charge of a charged object.

(3) Purifying the blood of kidney failure patients from toxins.

C The opposite diagram shows the orbit of a planet around the sun:

At which point the gravitational force between the planet and the Sun is the weakest?

Determine the affecting factor.



Model 4

Question 1

A Choose the correct answer:

(1) The table below shows samples of different materials.

Sample	Shiny	Flexible	Conducts Electricity
(1)	✗	✗	✓
(2)	✓	✗	✗
(3)	✗	✓	✗
(4)	✓	✓	✓

Which sample is suitable for making a water hose ?

ⓐ Sample (1). ⓑ Sample (2).

ⓒ Sample (3). ⓓ Sample (4).

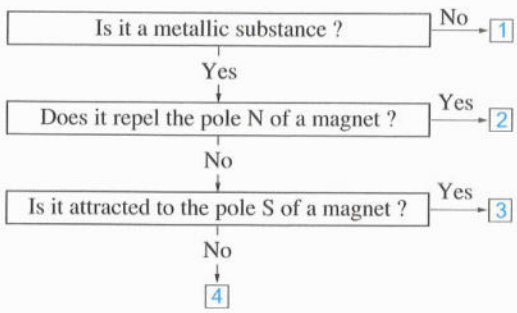
(2) From the opposite diagram, which one represents a silver rod ?

ⓐ (1).

ⓑ (2).

ⓒ (3).

ⓓ (4).



(3) The inputs and outputs substances of photosynthesis process are represented by the equation .....

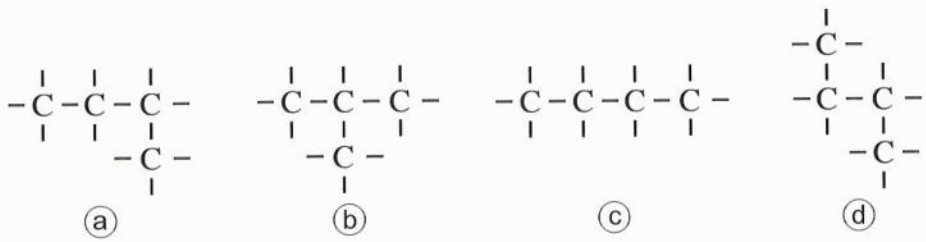
ⓐ Glucose + Oxygen ⟶ Water + Carbon dioxide.

ⓑ Glucose + Carbon dioxide ⟶ Water + Oxygen

ⓒ Carbon dioxide + Oxygen ⟶ Glucose + Water

ⓓ Carbon dioxide + Water ⟶ Glucose + Oxygen

(4) Which of the following represents a branched chain of carbon atoms?



ⓐ ⓑ ⓒ ⓓ

B Write what each of the following numbers represents:

(1) $\frac{1}{1836}$ u (2) 10 N/kg (3) 23.5°

C Name each of the following:

(1) The first metal in the alkali metals group.

(2) The lightest known solid material.

(3) The organelle found in eukaryotic cells where cellular respiration occurs.

Question 2

A Write the scientific term that for each of the following statements:

(1) Different forms of the same element's atoms, which have the same atomic number but different mass numbers.

(2) Swellings on the roots of fava bean plants where a type of bacteria lives.

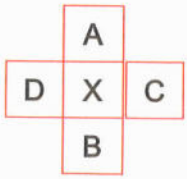
(3) The blocking of sunlight from the moon when the Earth comes between them in a straight line.

(4) A phenomenon resulting from an increase in the percentage of carbon dioxide in the atmosphere, causing a rise in Earth's temperature.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
The organelles	**Found in**
(1) Ribosomes	(1) Animal cells only.
(2) Centrosome	(2) Plant cells only.
(3) Nucleus	(3) Both animal and plant cells.
	(4) Animal, plant and bacterial cells.

C **The opposite diagram represents part of the s and p blocks in the modern periodic table. If the electron configuration of element (X) is 2, 8, 2, determine:**



(1) The number of energy levels in the atom of element (B).

(2) The atomic number of element (C).

(3) The block of element (A).

(4) The group of element (D).

Question 3

A **Complete the following sentences :**

(1) The planet ..... is known as the blue planet, while the planet ..... is known as the red planet.

(2) Penicillin is extracted from the fungus *Penicillium* ....., while *Penicillium* ..... gives the various color of Roquefort cheese.

(3) Methane consists of ..... and ..... elements.

(4) Rubbing an ebonite rod with wool, charges it with a ..... electric charge and the wool with a ..... electric charge.

B **State one consequence of each of the following:**

(1) Passing a narrow beam of electrons between two charged plates, one positively charged and the other negatively charged.

(2) Covering the tracheal tubes of an insect for several minutes.

(3) Placing a *Gazania* plant with flowers in a dark place.

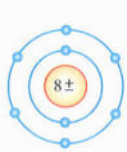
(4) Increasing the distance between the centers of two material objects.

C **Study the two opposite figures, then conclude:**

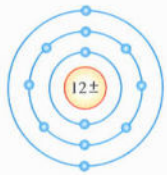
(1) The atomic number of element (X).

(2) The mass number of element (Y).

(3) The symbols of the ions of atoms (X) and (Y).



(X)



(Y)

Question 4

A **Explain the following:**

(1) *Euglena* cells are unspecialized.

(2) A compass box is not made of iron.

(3) A mixture of sand and iron filings is not considered a solution.

(4) The stability of the electron configuration of a neon atom.

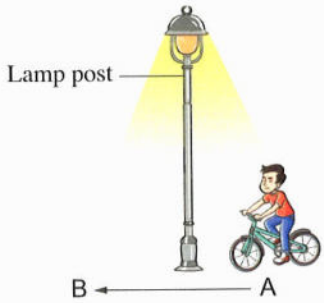
B Illustrate by drawing:

(1) Electric force lines for a positive charge.

(2) The electron configuration of a tritium atom.

(3) The Lewis structure of a carbon atom ($_6C$).

C In the opposite diagram:
What happens to the length of the shadow as the bicycle moves from point (A) to point (B)?



Model 5

Question 1

A Complete the following statements :

(1) The difference in density between cork and iron is a ..... property, while the change in color of a litmus paper when placed in vinegar represents a ..... change.

(2) Electric force lines do not ..... and start from the ..... electric charge.

(3) Examples of protozoa include ..... and .....

(4) The blood flowing in most arteries transports ..... and ..... to the body's cells.

B Choose the odd word (or phrase) out, then mention the relation between the rest :

(1) Venus / Earth / Mars / Jupiter.

(2) Chromium symbol / Sodium symbol / Carbon symbol / Iron symbol.

(3) Oxygen molecule / Water molecule / Methane molecule / Ammonia molecule.

C Explain how magnetic forces applications can be used in lifting unvisible fingerprints.

Question 2

A Write the scientific term for each of the following statements :

(1) Subatomic particles whose mass is neglected when calculating atomic mass.

(2) A bond formed between two atoms of one nonmetal element.

(3) The mutual force between the masses of two object's materials.

(4) Crops such as clover, lettuce and wheat.

B Choose from columns (B) and (C) what suit them in column (A):

(A)	(B)	(C)
(1) Dysentery disease	(1) Caused by bacteria	(1) *Penicillium Notatum.*
(2) Yeast fungus	(2) Caused by fungus	(2) *Salmonella Typhi.*
(3) Typhoid disease	(3) Used in yogurt production	(3) A source of vitamin B complex.
	(4) Used in ethyl alcohol production	(4) *Entamoeba Histolytica.*
	(5) Caused by protozoa	(5) A source of calcium.

C The Egyptian blue dye consists of four elements:

(1) What are the symbols of the two metallic elements in this compound ?

(2) How many atoms of each of the two other elements are there in one molecule of this compound ?

Question 3

A Choose the correct answer:

(1) Two rods, WX and YZ, were rubbed with a suitable material, and when the end of (X) was brought close to the end of (Y), repulsion occurred :

W	X		Y	Z

What happens when the end of (X) is brought close to end of (Z), and the end of (W) close to the end of (Y), respectively ?

ⓐ Attraction occurs, attraction occurs.

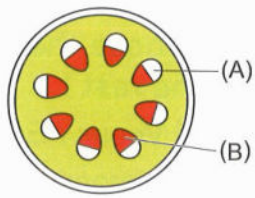
ⓑ Attraction occurs, repulsion occurs.

ⓒ Repulsion occurs, attraction occurs.

ⓓ Repulsion occurs, repulsion occurs.

(2) The opposite figure shows a cross-section of part (X) of a plant :

What is part (X), and which symbol indicates the xylem tissue ?



ⓐ Root, (A).

ⓑ Stem, (A).

ⓒ Root, (B).

ⓓ Stem, (B).

(3) All the following are field forces, except .....

ⓐ electrostatic forces. ⓑ magnetic forces.

ⓒ gravitational forces. ⓓ collision forces.

(4) Plants get their energy that necessary for growth from .....

ⓐ heat. ⓑ food. ⓒ salts. ⓓ water.

B The opposite figure shows some groups in the periodic table :

(1) What are the names of groups (A) and (D) ?

(2) What is the type of bonding formed between an element from group (B) and an element from group (C) ?

C Calculate the intensity of Earth's gravitational field at the top of a mountain if the weight of an object at the top is 85 N and its weight on Earth's surface is 100 N

Question 4

A Mark (✓) or (✗) for each statement, with correction :

(1) The number of protons and neutrons in an atom indicates its electrically neutral. ( )

(2) Veins carry blood to the heart, and xylem vessels transport water to the stem. ( )

(3) A total lunar eclipse occurs when the moon is in Earth's penumbra. ( )

(4) NPK fertilizer contains sodium, potassium and nitrogen. ( )

B Give reason :

(1) Differences between stem cells and muscular cells.

(2) Guard cells control the entry and exit of two gases.

(3) Mercury oxide is a compound, while mercury is an element.

C Arrange the planets of the solar system in an ascending order according to their diameters.

Model 6

Question 1

A Complete the following statements :

(1) The number of nucleons is the sum of the numbers of ..... and .....

(2) The periodic table contains 11 gaseous elements, 6 of which are ..... molecules, while the rest are ..... molecules.

(3) Painting metals by ..... method ensures a uniform layer of coating and reduces ..... of the coating material.

(4) ..... cells differentiate into ..... cells found in the brain.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
(1) *Mimosa* plant	(1) When the moon is full moon or new moon phase.
(2) Tides are more active	(2) Its flowers bloom during the day and close at night.
(3) A lunar eclipse occurs	(3) When the moon is only full moon phase.
	(4) Its leaves drooping and folding up when touched.

C Name the common term for each of the following:

(1) Electroscope. (2) Mars Planet. (3) Centrosome.

Question 2

A Write the scientific term for each of the following statements :

(1) Pure substances that can be separated by chemical methods.

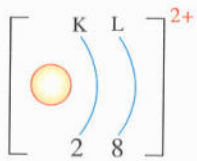
(2) The force responsible for causing all objects to fall towards the center of the Earth.

(3) The vital process in which harmful wastes and excess substances are eliminated from the body.

(4) A nonmetal atom that has gained one or more electrons.

B Study the following figures, then answer the questions below each :

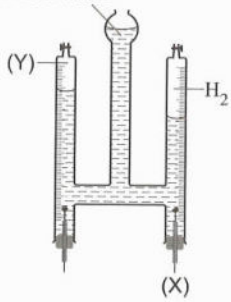
(1)



1- What is the atomic number of this ion ?

2- What is the atomic number of the element that precedes it in the same group ?

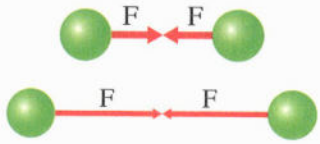
(2) Acidified water



1- What is the name of electrode (X) ?

2- What is the molecular formula of the gas (Y) ?

(3)



1- What is the force (F) ?

2- What is the affecting factor in this case ?

C What happens when a magnet is freely suspended by using a silk thread ?

Question 3

A Choose the correct answer :

(1) Which of the following represents the formula and number of elements in a nitric acid molecule ?

ⓐ HNO_2 , consisting of 3 elements. ⓑ HNO_2 , consisting of 4 elements.

ⓒ HNO_3 , consisting of 3 elements. ⓓ HNO_3 , consisting of 5 elements.

(2) Which of the following describes the periodic table ?

ⓐ Noble gases are located on the left side of the table.

ⓑ Each period begins mostly with a metal.

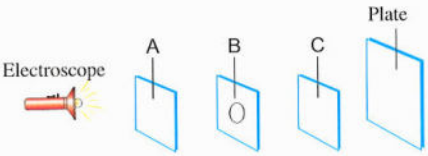
ⓒ Metalloids are located in the middle of the table.

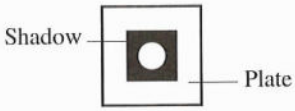
ⓓ The number of periods is greater than the number of groups.

(3) Which of the following represents the structures present in a bacterial cell ?

Choices	Cell wall	Plasma membrane	Cytoplasm	Nucleus
ⓐ	✓	✓	✗	✗
ⓑ	✗	✓	✗	✗
ⓒ	✗	✗	✓	✓
ⓓ	✓	✓	✓	✗

(4) When placing 3 plates of different materials between an electroscope and a plate (as shown), the shadow is formed on the barrier as illustrated :





Which of the following represents the light permeability of the plates ?

ⓐ (A) and (B) opaque, (C) transparent.

ⓑ (C) opaque, (B) transparent.

ⓒ (C) opaque, (A) transparent.

ⓓ (B) opaque, (A) and (C) transparent.

B Mention one use for each of the following :

(1) Aerogel. (2) Stainless steel alloy. (3) Egyptian blue dye.

C Illustrate with drawing :

(1) Magnetic field lines between two similar poles of different magnets.

(2) Covalent bonding in a water molecule using Lewis structure.

Question 4

A Mark (✓) or (✗) for each statements :

(1) The mass of neutrons is neglected when calculating the mass of the atom. ( )

(2) A neutral object can be charged positively through charging by contact. ( )

(3) Adult frogs respire through lungs only. ( )

(4) The equation for photosynthesis is the reverse of the cellular respiration equation. ( )

B Give reasons :

(1) The atomic number equals the mass number for protium.

(2) Leaving bean plant roots in the soil after harvesting the crop.

(3) It is necessary to brush teeth after meals.

C Arrange the rocky planets in an ascending order based on their diameters.

Model 7

Question 1

A Write the scientific term for each of the following statements :

(1) A table in which elements are arranged in order of increasing atomic mass.

(2) Homogeneous mixtures.

(3) Living organisms whose genetic material is surrounding with nuclear membrane.

(4) The organ that gets rid of excess water, mineral salts and urea in the form of urine.

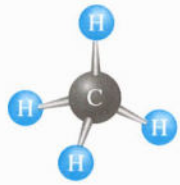
B Correct the underlined words :

(1) *Amoeba* moves using a **flagellum**.

(2) Magnetic forces are **contact** forces.

(3) Plant cells and bacterial cells both contain **chloroplasts**.

C The figure represents a molecule of a compound :



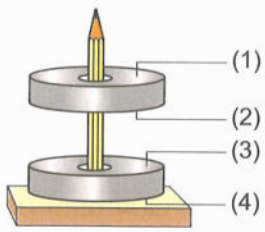
(1) What type of bonds are present in this molecule ?

(2) What is the name of this compound ?

Question 2

A Choose the correct answer :

(1) From the opposite diagram :
Which of the following represents the poles of these two magnets ?



ⓐ (2) : N, (4) : N ⓑ (2) : S, (3) : S
ⓒ (1) : N, (4) : S ⓓ (1) : S, (4) : N

(2) A student observed a sample of pond water under a microscope for 3 days and noticed an increase in the number of *Amoeba* and a change in their direction when they collided with sand particles.
Which of the following best describes the characteristics of *Amoeba* observed by the student ?

ⓐ Movement, nutrition. ⓑ Growth, transport.
ⓒ Reproduction, transport. ⓓ Movement, reproduction.

(3) Which of the following revolves around the Earth ?

ⓐ Stars. ⓑ The moon. ⓒ The sun. ⓓ Planets.

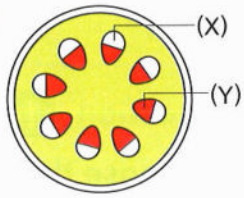
(4) Both the proton and neutron share property (X) but differ in property (Y).
Which of the following describes the two properties (X) and (Y)?

ⓐ (X) : Symbol, (Y) : Charge type. ⓑ (X) : Mass, (Y) : Charge type.
ⓒ (X) : Charge type, (Y) : Symbol. ⓓ (X) : Symbol, (Y) : Mass.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
(1) The physical state of bromine	(1) Resembles the Lewis structure for aluminum ($_{13}$Al).
(2) The physical state of iodine	(2) Resembles the physical state of mercury.
(3) Lewis structure for an oxygen atom ($_{8}$O)	(3) Resembles the physical state of sodium.
	(4) Resembles the Lewis structure for sulphur ($_{16}$S).
	(5) Resembles the physical state of argon.

C The opposite figure represents a section of a part of a plant :



(1) Which part of the plant does the figure represent ?

(2) Replace (X) and (Y) with the appropriate data.

Question 3

A Complete the following sentences :

(1) ..... compounds mostly dissolve in water, while most ..... compounds do not conduct electricity.

(2) The ..... of charge that a rubbed object acquires varies depending on the type of ..... used for rubbing.

(3) Carbohydrates are formed of the elements ....., hydrogen and .....

(4) On the first of September, we are in the season of ....., while on the first of March, we are in the season of .....

B Mark (✓) or (✗) for each of the following, with correction :

(1) The bonding type in a hydrogen chloride molecule is ionic. ( )

(2) The gravitational force of Earth on the moon is greater than that of the moon on the Earth. ( )

(3) Magnetic field lines start from the N pole and end at the S pole. ( )

C Write the names and symbols of the elements in the following compounds :

(1) Nitric acid. (2) Egyptian blue dye. (3) Table salt.

Question 4

A Choose the odd word out, then write the relation between the rest :

(1) *Amoeba* / Bacteria / Yeast / Bread mold.

(2) Saturn / Venus / Jupiter / Neptune.

(3) New moon / Waxing crescent / First quarter / Waxing gibbous.

B What happens when :

(1) A magnet is divided into two parts.

(2) Moving from one group to the next in the same period (**In terms of :** Atomic number).

(3) An object leaves Earth's gravitational field to outer space (**In terms of :** Weight).

C The figure shows an electroscope after object (X) touched its metal disc :

(1) What is the charge of object (X) ?

(2) What happens to the leaves of the electroscope when the metal disc is touched by hand ?

Model 8

Question 1

A Choose the correct answer :

(1) Insulin is produced by a group of similar cells in the pancreas.
Which of the following represents this group of cells ?

ⓐ An organ in a system. ⓑ A system in a living organism.

ⓒ Cells without cell walls. ⓓ Tissue in an organ.

(2) From the opposite figure :
What is the cause of the swelling observed after few days of removing the outer part of the plant stem ?

ⓐ The accumulation of food transporting upwards in the stem.

ⓑ The accumulation of water transporting upwards in the stem.

ⓒ The accumulation of food transporting downwards in the stem.

ⓓ The accumulation of water transporting downwards in the stem.

(3) The following table shows the effect of broughting the north then the south poles close to four different objects.
Which of these objects is magnetic ?

Object	Attracted to magnet	Repel from magnet
(W)	✓	✗
(X)	✓	✓
(Y)	✗	✗
(Z)	✗	✗

ⓐ (W) only. ⓑ (X) only. ⓒ (W), (X) only. ⓓ (Y), (Z) only.

(4) An element has the electrons of its atom distributed in 3 energy levels, with 3 electrons in its outermost energy level and 14 neutrons in its nucleus. What is the mass number of this element ?

ⓐ 3 ⓑ 13 ⓒ 14 ⓓ 27

B Mark (✓) or (✗) for each of the following :

(1) The diameters of planets depend on their distance from the sun. ( )

(2) Ozone is a compound because its molecule is composed of 3 oxygen atoms. ( )

(3) An ionic compound molecule is electrically neutral. ( )

(4) *Euglena* is a unicellular protozoan. ( )

C Why is it necessary to boil the milk used in yogurt production for 25 minutes ?

Question 2

A Choose the odd word (or sentence) out, then write the relation between the rest :

(1) Orange crop / Watermelon crop / Wheat crop / Clover crop.

(2) Electrostatic forces / Gravitational forces / Elasticity forces / Magnetic forces.

(3) Water molecule / Nitrogen molecule / Hydrogen molecule / Sodium chloride molecule.

(4) Digestion / Nutrition / Transport / Respiration.

B State one result for each of the following :

(1) Touching a neutral electroscope with a charged rod.

(2) Adding a spoonful of sugar to a salt solution used for pickling olives.

(3) The Earth aligning in a straight line with the moon and the sun.

C A body weighs 600 N at the base of Mount Everest.
Calculate its mass at it's top. [Note: Earth's gravitational field intensity = 10 N/kg]

Question 3

A Correct the underlined words :

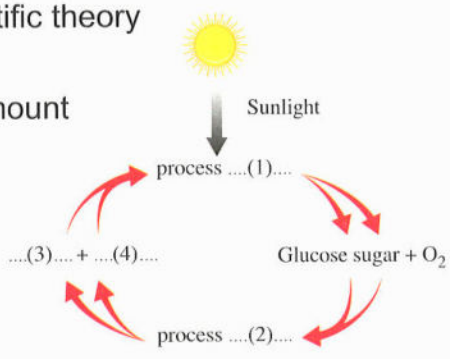
(1) **Earth** is ranked fifth among planets in ascending order of their diameters.

(2) **Primary** cells control the opening and closing of stomata.

(3) The scientist **Rutherford** proposed the first scientific theory of the atom.

(4) **A newton meter device** is used to measure the amount of weak electric charges.

B Replace the numbers in the diagram with the appropriate processes or substances.



C Sodium is in group (X) of the periodic table :

(1) What is the name of the metals in group (X) ?

(2) Draw the Lewis structure for the element (Y) located below sodium in the same group.

Question 4

A Write the scientific term for each of the following statements :

(1) The basic unit of structure and function of living organisms.

(2) The physical property used to distinguish between water and honey in terms of flow resistance.

(3) The natural magnet discovered in the region of ancient Magnesia.

(4) The regions in which electrons orbit around the nucleus of an atom.

B Write the number that corresponds to each of the following :

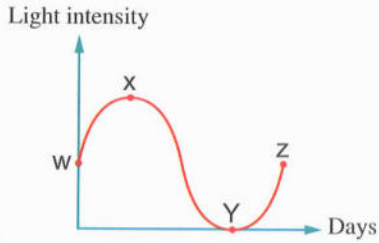
(1) The atomic number of the element located in period 3 and the alkaline earth metals group.

(2) The number of calcium atoms in one molecule of Egyptian blue dye.

(3) The number of times the phenomenon of tides occurs each day.

C The opposite graph shows the intensity of light reflected from the surface of the moon over a period of time, which can be measured by special devices.
Identify the symbol that represents the moon when it is in :

(1) The new moon phase. (2) The full moon phase.



Model 9

Question 1

A Complete the following sentences :

(1) The mass of the atom is concentrated in the ....., while Earth's gravity is concentrated in the ..... of the Earth.

(2) Period 2 of the periodic table begins with ..... element and ends with ..... element.

(3) Similar magnetic poles ....., while opposite magnetic poles .....

(4) Living organisms are classified as ..... and .....

B Mark (✓) or (✗) for each of the following statements :

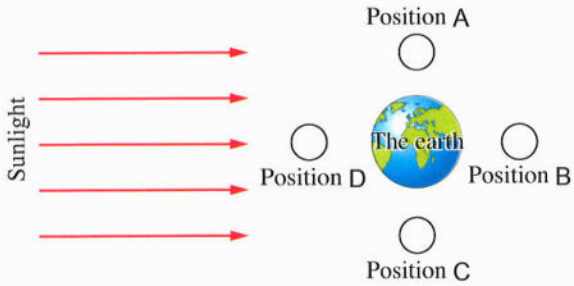
(1) The melting point of butter block is lower than the melting point of aerogel sheet.

(2) A glass rod gains a positive charge when rubbed with a piece of silk.

(3) Lactic acid bacteria convert lactic acid into lactose sugar.

C From the opposite diagram :

Identify the locations of the first quarter and the last quarter, **and determine** the period of time between them.



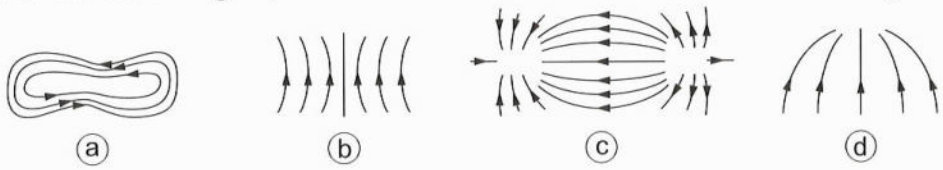
Question 2

A Choose the correct answer :

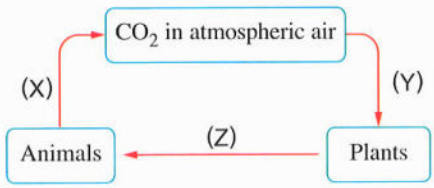
(1) Which of the following represents the electron configuration of an element whose molecule is composed of two atoms ?

ⓐ 2, 8, 7 ⓑ 2, 8, 1 ⓒ 2, 8, 8 ⓓ 2, 2

(2) Which of the following represents the electric field between two charged points ?



(3) From the opposite figure:
Which of the following represents the vital processes (X), (Y) and (Z) in this diagram ?

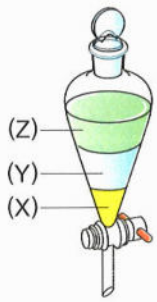


Choices	(X)	(Y)	(Z)
ⓐ	Respiration	Photosynthesis	Transport
ⓑ	Excretion	Respiration	Nutrition
ⓒ	Excretion	Photosynthesis	Respiration
ⓓ	Respiration	Transport	Nutrition

(4) In three experiments conducted as follows :

- **Experiment 1 :** Liquid (1) was added to liquid (2), and liquid (1) floated.
- **Experiment 2 :** Liquid (2) was added to liquid (3), and liquid (2) floated.
- **Experiment 3 :** All three liquids were added together, and the liquids settled in the order shown in the opposite figure.

Which of the following is correct ?



Choices	Liquid (1)	Liquid (2)	Liquid (3)
ⓐ	(Y)	(X)	(Z)
ⓑ	(Z)	(Y)	(X)
ⓒ	(X)	(Y)	(Z)
ⓓ	(Y)	(Z)	(X)

B **Write the scientific term for each of the following statements :**

(1) A subatomic particle whose charge can be neglected but whose mass cannot be ignored.

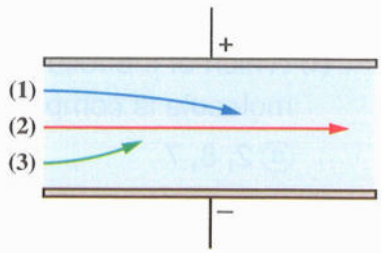
(2) A metalloid with the chemical symbol Si

(3) Earth's gravitational pull on an object.

C **Compare between** dysentery **and** typhoid fever "in two points only".

Question 3

A **The opposite figure shows the paths of three subatomic particles in an electric field :**



Which of these subatomic particles :

(1) Transfers from one material to another when rubbed.

(2) Changes in number in isotopes of the same element.

(3) Their total number known as the number of nucleons.

B **Study the two following figures and answer the questions below each :**

(1)

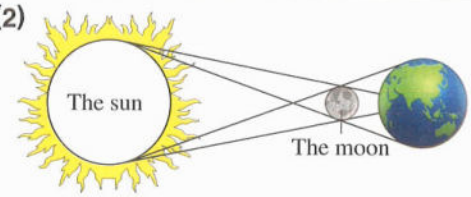
When the pole (Y) of magnet (1) is brought close to pole (X) of magnet (2), repulsion occurs.

What happens when :

1- Pole (Z) is brought close to pole (X).

2- Pole (Z) is brought close to pole (W).

(2)



Does the figure represent a lunar eclipse?
Explain your answer.

C **Draw the Lewis structure** for the atom that forms the chains of organic compounds, **and draw** a branched chain consisting of 4 atoms.

Question 4

A **Correct the underlined words :**

(1) **The compass** is an ancient tool that was used to determine the time.

(2) The sun appears larger from **Earth** compared to other planets.

(3) Liver cells can be produced by transforming **muscular** cells.

(4) The principal energy level **M** saturated with 32 electrons.

B **Give reason :**

(1) Phosphorus is important for plants.

(2) Water is classified as a compound.

(3) Xylem tissue is important for plants.

C Choose from column (B) what suits it in column (A) :

(A)	(B)
(1) Decomposition bacteria	(1) A harmful unicellular organism.
(2) Yeast fungus	(2) A beneficial unicellular organism.
	(3) A beneficial prokaryote.
	(4) A beneficial protozoan.

Model 10

Question 1

A Complete the following sentences :

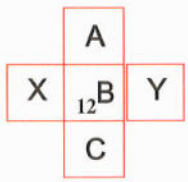
(1) Period 5 in the periodic table ends with an element from the ....., and is preceded by an element from the .....

(2) ..... can be separated by physical methods, while ..... can be separated by chemical methods.

(3) A nonmetal element that has the ability to conduct electricity is .....

(4) ..... are not surrounded by a nuclear membrane in the cells of .....

B The opposite figure shows a section of the modern periodic table :



(1) What is the atomic number of elements (X) and (Y) ?

(2) What is the period number of element (A) and the group number of element (C) ?

C What is the result of each of the following :

(1) Not keeping yogurt in the fridge.

(2) Adding *Penicillium Notatum* to a bacterial culture.

(3) Moving upwards from the surface of the Earth. **(in terms of Earth's gravitational field intensity).**

Question 2

A Write the scientific term for each of the following statements :

(1) The main compound that forms limestone.

(2) Properties that appear only when there is a change in the shape and structure of the substance.

(3) The region of space around a magnet where effect of its magnetic force appear in it.

(4) A technological technique that supplies hydrogen gas and absorbs CO_2 emitted from car exhaust to produce environmently friendly fuel.

B Give reason :

(1) A chemical change occurs during the production of yogurt.

(2) The charges formed on the rubbing and rubbed objects differ according to their position in the electrostatic series.

(3) The atmosphere of Uranus appears blue-green.

C What physical quantities are measured by the following units :

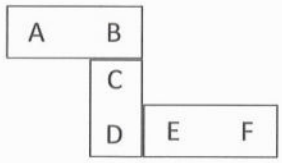
(1) N/kg

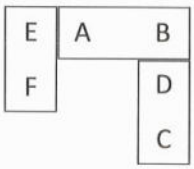
(2) Coulomb.

Question 3

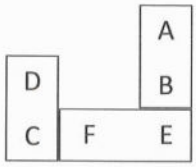
A Choose the correct answer :

(1) A student arranged 3 magnets as shown in the opposite figure, then rearranged them in a different way. Which of the following represents the correct arrangement ?

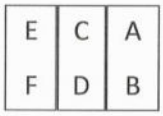




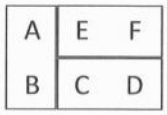
ⓐ



ⓑ



ⓒ



ⓓ

(2) Which of the following describes the effect of Earth's rotation on its own axis and its orbit around the sun ?

Choices	Effect of Earth's rotation on its own axis	Effect of Earth's orbit around the sun
ⓐ	Tides	Sunset
ⓑ	Sunrise in the east	Flowers blooming in spring
ⓒ	Celebrating Sham El-Nessim	Phases of the moon
ⓓ	Birds migration to warmer regions	Celebrating Christmas

(3) The scientists approaching molten lava wear clothing made from materials with special properties.
Which of the following describes the properties of these materials ?

ⓐ Strong and good heat conductors only.

ⓑ Flexible, strong and good heat conductors.

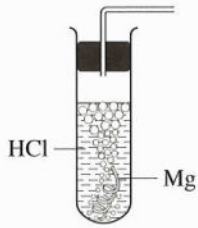
ⓒ Strong and poor heat conductors only.

ⓓ Flexible, strong and poor heat conductors.

(4) Oxygen–18 isotope contains 10 neutrons in its nucleus. How many protons are in the nucleus of oxygen–17 isotope ?

ⓐ 7 ⓑ 8 ⓒ 17 ⓓ 18

B The opposite figure shows the effect of adding HCl solution to a strip of Mg in an experiment :



(1) What is the name of the element used in the experiment ? and is it a metal or a nonmetal ?

(2) What type of change occurred? Explain.

C Explain one contribution made by each of the following scientists in improving science :

(1) Moseley.

(2) Newton.

Question 4

A Write the word equation that represents the following processes :

(1) Photosynthesis.

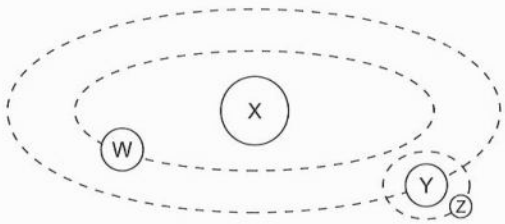
(2) Cellular respiration.

B Compare in two points between :

(1) Mass **and** weight.

(2) Electric forces **and** gravitational forces.

C The opposite figure represents the orbits of three celestial bodies in our solar system.



Complete the following table with the mark (✓) in the appropriate boxes :

	Statements	Correct	Wrong	Not confirmed
(1)	Z is a moon of the planet Y	.....	.....	.....
(2)	W, X, Y are natural moons	.....	.....	.....
(3)	Y takes about 365 $\frac{1}{4}$ days to orbit around X	.....	.....	.....
(4)	X exerts a gravitational force on W and Y	.....	.....	.....

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9